

A taxonomic revision of *Acalypha* L. (Euphorbiaceae) in Australia

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Summary

Forster, Paul I. (1994). A taxonomic revision of *Acalypha* L. (Euphorbiaceae) in Australia. *Austrobaileya* 4(2): 209–226. The genus *Acalypha* L. is revised for Australia. Eight species are present in Australia, including six native taxa, *A. capillipes* Muell. Arg., *A. eremorum* Muell. Arg., *A. lanceolata* Willd., *A. lyonsii* P.I. Forst. sp. nov., *A. nemorum* F. Muell. ex Muell. Arg. and *A. pubiflora* subsp. *australiana* Radcl. – Sm. and two naturalised taxa, *A. australis* L. and *A. wilkesiana* Muell. Arg. Lectotypes are selected for *A. capillipes*, *A. cunninghamii* Muell. Arg., *A. eremorum* and *A. nemorum*. *A. indica* var. *australis* F.M. Bailey is placed in the synonymy of *A. lanceolata*.

Keywords: *Acalypha* – Australia; *Acalypha australis*, *Acalypha capillipes*, *Acalypha eremorum*, *Acalypha lanceolata*, *Acalypha lyonsii*, *Acalypha nemorum*, *Acalypha pubiflora* subsp. *australiana*, *Acalypha wilkesiana*.

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Introduction

The genus *Acalypha* was described by Linnaeus in his 'Species Plantarum' and included three species at that time. Species of *Acalypha* are widespread in both the New and Old Worlds and there are around 430 species in the genus (Mabberley 1989). According to Webster (1994), *Acalypha* is the sole member of subtribe *Acalyphinae* Griseb. in tribe *Acalypheae* Dumort., but there has been no critical assessment of its relationship to other genera in the Euphorbiaceae.

The genus was first recognised for Australia in the 1860's by J. Mueller (1864, 1865, 1866) who described *A. capillipes*, *A. cunninghamii*, *A. eremorum* and *A. nemorum*, based mainly on material forwarded to him at Geneva by F. Mueller in Melbourne. Bentham (1873) recognised only three species in Australia, reducing *A. cunninghamii* to synonymy of *A. nemorum*. Bailey (1902) recognised four species in Queensland, those of Bentham and *A. indica* var. *australis* F.M. Bailey.

Airy Shaw (1981), in his conspectus of Australian Euphorbiaceae, recognised as native *A. capillipes*, *A. eremorum* and *A. nemorum*

and considered *A. australis* L. and *A. wilkesiana* Muell. Arg. as naturalised. Airy Shaw included *A. indica* var. *australis* in the synonymy of *A. australis*. More recently Radcliffe-Smith (1990) included *A. lanceolata* Willd. as a new record for Australia and described *A. pubiflora* subsp. *australiana* both from Western Australian material.

The present revision arose as part of my studies in the family directed towards a 'Flora of Australia' treatment and is necessary for the following reasons:

- (1) One new taxon requires naming.
- (2) The names of over half the taxa require lectotypification.
- (3) All species require detailed descriptions. This was not undertaken by Airy Shaw (1981) or Radcliffe-Smith (1990).
- (4) Considerable new data on distribution has become available and greatly modifies those given by Airy Shaw (1981).

Hence, in the present revision eight taxa, six native (five endemic) and two naturalised, are recognised.

Materials and Methods

This revision is based on herbarium holdings at AD, BRI, CANB, CBG, MEL, NSW, PERTH and QRS, photographs of type material at BM, G-DC and K, and field collections and observations by the author.

Foliage measurements and descriptions have been made from dried material. Flower and fruit descriptions have been made from both spirit and dried material. Leaf sizes refer to those measured on fertile stems. Indumentum cover is as defined by Hewson (1988), except that 'scattered' is used instead of 'isolated'. The term 'refringent glands' refers to small cellular structures that are sessile and somewhat embedded in the leaf lamina of some species. Airy Shaw (1981) used this term, although whether these structures are glandular in function requires investigation.

The 'Wet Tropics' is defined as that area of north-eastern Queensland which encompasses the 'hot, humid vine forests' from near Cooktown in the north to Paluma in the south (Webb & Tracey 1981, Barlow & Hyland 1988).

Taxonomy

Acalypha L., Sp. Pl. 1003 (1753). **Type:** *A. virginica* L. (lecto; *vide* J.K. Small in N.L. Britton & A. Brown, Ill. Fl. N. U.S. ed. 2, 2: 457 (1913)).

Derivation of name: from the Greek *akalephe*, an ancient name used by Hippocrates for the nettle meaning not (*a*) pleasant (*kalos*),

alluding to the similarity between some species of *Acalypha* and stinging nettles.

Herbs, shrubs or small trees, annual or perennial, monoecious or dioecious. Indumentum of simple, rarely stellate, often glandular trichomes and sometimes with sessile refringent glands. Stems developing bark or lenticellate. Leaves alternate, generally petiolate, stipulate, elobate, often toothed, palmi- or penninerved. Inflorescences terminal or axillary, solitary or paired, uni- or bisexual, spicate, racemose or paniculate. Bisexual inflorescences axillary or terminal, with female flowers towards the base and male flowers towards the apex. Female inflorescences axillary or terminal with flowers usually sessile and 1–5 within a toothed or lobed accrescent bract. Female flowers: calyx lobes 3–5 and imbricate; petals and disc absent; ovary 2 or 3 locular with 1 ovule per locule; styles free or variously connate, usually lacinate, rarely entire or bilobed. Male inflorescences axillary with flowers pedicellate and clustered together into bracteate glomerules. Male flowers: calyx lobes 4-parted and valvate; petals and disc absent; stamens 8–12 and attached to a slightly raised receptacle; filaments free, filiform or flattened; anthers basifixed, bilobate, thecae oblong to linear, longitudinally dehiscent; pistillodes absent. Fruits capsular, trilobate, dehiscent septically into 3 bivalved cocci. Seeds ellipsoid or subglobose, carunculate or ecarunculate; testa crustaceous; albumen fleshy; cotyledons broad, flat.

A genus of approximately 430 species in the Old and New Worlds. Eight species in Australia.

Key to species of *Acalypha* in Australia

1. Plant a wiry herb 2
Plant a perennial shrub or small tree 3
2. Inflorescences single in each axil; inflorescence axis with glandular trichomes **5. A. lanceolata**
Inflorescences usually paired in each axil; inflorescence axis without glandular trichomes **1. A. australis**
3. Leaf lamina with refringent glands on the lower surface 4
Leaf lamina without refringent glands on the lower surface 5

4. Virgate shrub; leaf lamina 3–30 mm long, with refringent glands on upper surface 4. *A. lyonsii*
 Spreading shrub; leaf lamina 25–120 mm long, refringent glands absent on upper surface 7. *A. pubiflora*
5. Branchlets with ridges of cream-coloured, flaky bark; female flowers on long peduncles 2. *A. capillipes*
 Branchlets lenticellate and without ridges of cream-coloured, flaky bark; female flowers ± sessile 6
6. Foliage variously variegated; leaves palminerved and 5-veined from base 8. *A. wilkesiana*
 Foliage green; leaves penninerved 7
7. Virgate shrub; leaf lamina with 5–7 lateral veins per side of midrib 3. *A. eremorum*
 Spreading shrub; leaf lamina with 8–10 lateral veins per side of midrib 6. *A. nemorum*

1. *Acalypha australis* L., Sp. Pl. 1004 (1753).

Type: ‘America meridionalis’ [China] (lecto: LINN1139.5 [fiche at BRI!]; *vide* Airy Shaw, Kew Bull. 35: 584 (1981)).

Wiry herb to 150 mm high, monoecious; indumentum consisting of simple non-glandular trichomes. Stems rounded, with sparse to dense trichomes; spines absent. Stipules lanceolate, 0.5–2 mm long, 0.2–0.4 mm wide, with scattered trichomes. Leaves petiolate, eglandular, discolorous; petioles 1–60 mm long, 0.5–1 mm wide, with sparse trichomes; lamina ovate to obovate, 9–85 mm long, 5–40 mm wide, venation palminerved with 3-veins from base and with 2–4 lateral veins per side of midrib; margins shallowly crenate; upper surface dark green, glabrous, venation ± obscure; lower surface pale green, glabrous or with a few scattered trichomes, venation weakly developed; tip acute; base cuneate. Inflorescences axillary and solitary, racemose-spicate, up to 20 mm long, bisexual, axis with sparse trichomes; bracts unequally crenate, 3–4 mm long, 7–15 mm wide, glabrous or with scattered trichomes. Female flowers sessile; sepals lanceolate, c. 0.8 mm long and 0.4 mm wide, with sparse trichomes; styles 1–2.5 mm long, fused for 0.2–0.5 mm at base, branched 2 or 3 times, clear to brownish; ovaries 1–1.8 mm long, 0.8–1.5 mm diameter. Male flowers: pedicels 0.3–0.4 mm long, c. 0.05 mm diameter, glabrous; sepals lanceolate, 0.4–0.5 mm long, 0.2–0.3 mm wide, glabrous; stamens 8, fila-

ments flattened, c. 0.2 mm long and 0.1 mm wide; anthers c. 0.1 mm long and 0.05 mm wide. Fruits depressed-globose, c. 1.8 mm long and 2 mm diameter, with sparse trichomes. Seeds ovoid, 1.7–1.8 mm long, 1.1–1.3 mm wide, 0.9–1 mm thick, smooth, dark brown.

Specimens examined: Queensland. PORT CURTIS DISTRICT: North Rockhampton, Feb 1980, *Stanley* 453 (BRI). MORETON DISTRICT: Brisbane Botanic Gardens, Dec 1924, *Bick* [AQ201022] (BRI); ditto, Oct 1930, *White* 7141 (BRI); ditto, May 1942, *White* 11747 (BRI); ditto, Apr 1961, *Pedley* 772 (BRI); The Gap, Brisbane, Dec 1993, *Forster* 14483 (BRI, MEL, NSW); Indooroopilly, Brisbane, May 1969, *Kleinschmidt* [AQ201020] (BRI). New South Wales. Doon Doon, May 1978, *Fogarty* s.n. (NSW).

Distribution and habitat: Native to Asia and northern Malesia (Airy Shaw 1981), *A. australis* is naturalised in a few localities near habitation in south-east Queensland and in north-east New South Wales (**Map 1**). Plants are common as weeds in footpaths or in gardens.

Phenology: Flowers and fruits throughout the year.

Notes: Linnaeus (1753) cited two elements for *A. australis*, “Plum. spec. 20?” and “*Habitat in America meridionali*”. Airy Shaw (1981) cited “Type: ‘America meridionalis’, *leg.?* (LINN)”, with no accompanying discussion. Linnaeus obviously regarded the first element he cited as questionable, and Airy Shaw appears to have disregarded it. There is one specimen in LINN (as seen on the microfiche) with ‘America meridionalis’ and this is regarded as lectotype of the name.

Airy Shaw (1981) erroneously included *A. indica* var. *australis* F.M. Bailey in the synonymy of *A. australis*. Bailey's variety is conspecific with *A. lanceolata*.

2. *Acalypha capillipes* Muell. Arg., *Linnaea* 34: 40 (1865); *Acalypha eremorum* var. *capillipes* Baill., *Adansonia* 6: 317 (1866) 'capillipeda'; *Ricinocarpus capillipes* (Muell. Arg.) Kuntze, *Rev. Gen. Pl.* 2: 617 (1891). **Type:** New South Wales. Clarence [River], *Beckler* 16 (lecto [here designated]: MEL! [MEL707648]; isolecto: Clarence River, *Beckler* (K [photo at BRI!]).

Illustrations: K.A.W. Williams, *Native Pl. Queensl.* 2: 31 (1984); J. Hauser, *Fragments of Green* 189 (1992).

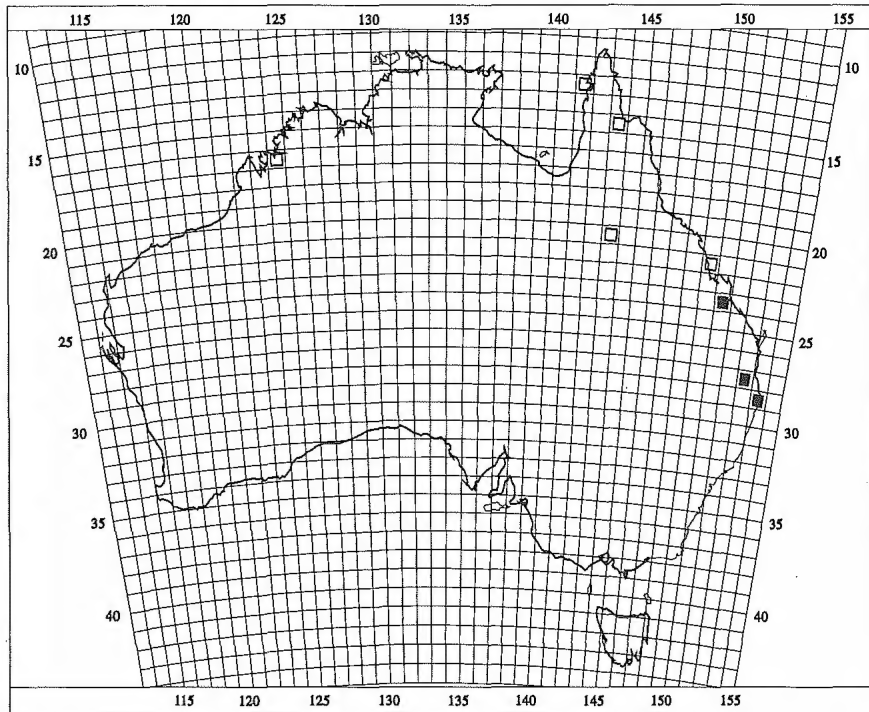
Erect, virgate shrub to 3 m high, perennial, monoecious, seasonally deciduous; indumentum consisting of simple non-glandular trichomes unless otherwise stated. Branchlets rounded, with dense trichomes when young, glabrescent, lenticels absent, developing ridges of cream-coloured flaky bark that sheds in long strips; lateral branches often terminating in simple spines up to 15 mm long. Stipules lanceolate, 0.6–0.8 mm long, 0.3–0.4 mm wide, with sparse trichomes. Leaves petiolate, eglandular, discoloured; petioles 1–5 mm long, 0.2–0.3 mm wide, with sparse trichomes; lamina elliptic, obovate or ovate, 4–25 mm long, 3–10 mm wide, venation penninerved and comprising 4 or 5 lateral veins per side of midrib; margins crenate to sinuate; upper surface matt green, venation ± obscure, with scattered trichomes when young, glabrescent; lower surface pale green, venation weakly developed, glabrous apart from scattered trichomes on veins; tip mucronate, retuse or truncate; base cuneate to obtuse. Inflorescences axillary and solitary, racemose or spicate, unisexual. Female inflorescences spicate, up to 30 mm long, comprising a single pedunculate flower; peduncles 10–26 mm long, glabrous or with scattered trichomes; bracts sinuate, but not irregularly crenate, 1–4 mm long, 2–6 mm wide, glabrous. Female flowers sessile; sepals 3, narrowly ovate, 0.5–0.8 mm long, 0.4–0.5 mm wide, with sparse trichomes; styles 2–3 mm long, fused for c. 0.5

mm at base, repeatedly branched 2 or 3 times, red; ovaries 0.6–1 mm long, 0.6–1.8 mm diameter, with sparse non-glandular trichomes and scattered to sparse glandular trichomes. Male inflorescences up to 20 mm long, racemose, peduncles up to 2 mm long, glabrous or with scattered trichomes, densely flowered with the glomerules of flowers ± continuous or up to 3 mm apart; bracts lanceolate-triangular, c. 0.3 mm long and 0.2 mm wide, with scattered to sparse trichomes. Male flowers: pedicels 0.4–1.2 mm long, c. 0.1 mm diameter, glabrous; sepals narrowly ovate, 0.7–0.9 mm long, 0.3–0.5 mm wide, glabrous or with scattered to sparse trichomes; stamens 8, filaments flattened, 0.2–0.6 mm long, c. 0.1 mm wide, anthers 0.3–0.5 mm long, c. 0.1 mm wide. Fruits depressed-globose, 1.8–2 mm long, 3–4 mm diameter, with sparse non-glandular trichomes and scattered glandular trichomes. Seeds ovoid, 1.9–2.3 mm long, c. 1.8 mm wide, c. 1.8 mm thick, smooth, light brown. **Fig. 1A–F.**

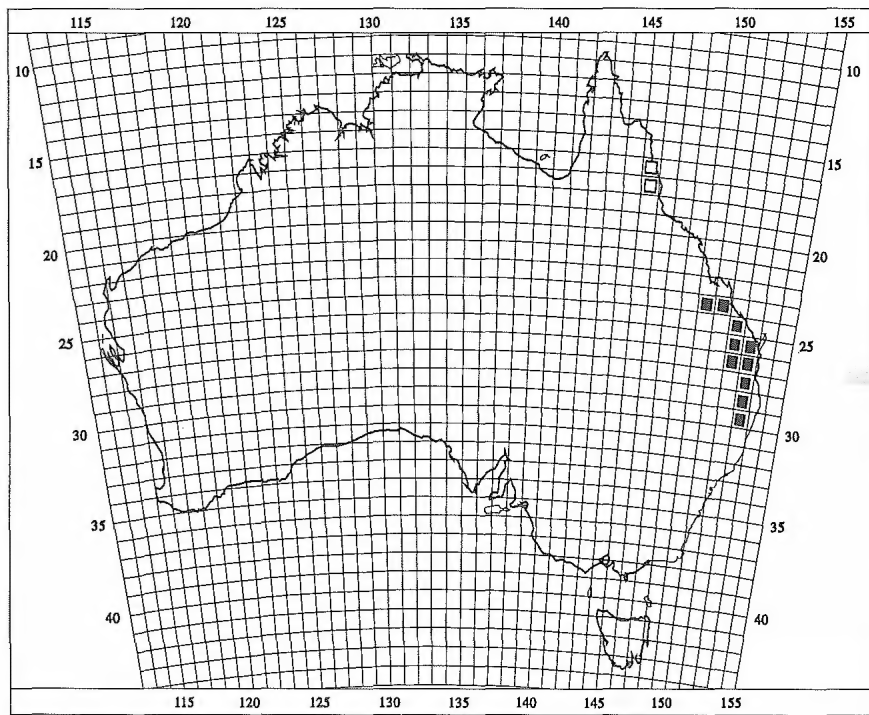
Selected specimens: Queensland. LEICHHARDT DISTRICT: 4 miles [6.7 km] ESE of Edungalba, Jun 1960, *Johnson* 1967 (BRI). PORT CURTIS DISTRICT: S.F. 60, Rundle Range, 23°38'S, 150°58'E, Nov 1987, *Gibson* 929 (BRI). BURNETT DISTRICT: Eidsvold, *Bancroft* [AQ201027] (BRI); Tablelands, 6 miles [10 km] N of Murgon, Nov 1980, *Seiler* 8 (BRI); Mt Wooroolin, near Kingaroy, 26°31'S, 151°48'E, Dec 1991, *Smyrell* [AQ509763] (BRI). WIDE BAY DISTRICT: S.F. 50 Glenbar, 1 km WSW of Mt Urah summit, 25°50'S, 152°20'E, Feb 1993, *Forster* 13127 & *Machin* (BRI, MEL, QRS); NW base of Boogooramunya, 25°51'S, 152°08'E, Jan 1989, *Forster* 4896 (BRI); Mt Glastonbury, S.F. 242 Glastonbury, 26°14'S, 152°27'E, Dec 1991, *Forster* 9291 & *Sharpe* (BRI, K, L, MEL, QRS); Kin Kin, Mar 1916, *Francis & White* [AQ201038] (BRI). DARLING DOWNS DISTRICT: 20 km E of Bell, Nov 1980, *Strong* 170 (BRI). MORETON DISTRICT: Stable Camp, Yarraman S.F., 26°51'S, 151°56'E, Nov 1987, *Forster* 3229 *et al.* (BRI); Commissioners View, Blackbutt Range, S.F. 283, 26°53'S, 152°12'E, Apr 1990, *Forster* 6637 (BRI, L, MEL, QRS); Mt Davidson, 5 km S of Withcott, 27°36'S, 152°02'E, Jul 1990, *Forster* 6926 & *Bird* [AQ330374] (BRI). New South Wales. Acacia Creek, 28°22'S, 152°19'E, Dec 1986, *Coveny* 12414 *et al.* (BRI, NSW); Pikapene S.F., c. 12 miles [20 km] directly SE of Tabulam, Nov 1966, *Hayes* 2659 *et al.* (BRI, NSW).

Distribution and habitat: *A. capillipes* is found in central and south-east Queensland and north-east New South Wales (**Map 2**). Plants grow in microphyll and notophyll vineforest on various soiltypes at altitudes below 700 m.

Phenology: Flowers January to May; fruits October to December.



Map 1. *Acalypha australis* (closed squares); *A. lanceolata* (open squares).



Map 2. *Acalypha capillipes* (closed squares); *A. lyonsii* (open squares).

Notes: In the protologue of *A. capillipes*, J. Mueller states “In Nova Hollandia ad Clarence-River (nuperrime cum aliis Euphorbiaceis novis benevole misit cl. Ferd. Miller).” Airy Shaw (1981) gives for the type “N.S.W., Clarence River, [Beckler 19] (MEL,K).” There are specimens at G-DC, K and MEL that are probably all part of the original type collection that F. Mueller received from Beckler and then proceeded to label badly and distribute indiscriminantly. The MEL sheet selected as lectotype of the name is the best of those available and clearly indicates Beckler as the collector. I have accepted a second sheet at K as an isolectotype.

Material of *A. capillipes* is often confused with that of *A. eremorum* and when sterile it may be difficult to identify on leaf morphology alone. In nearly all instances I have easily been able to distinguish herbarium material of *A. capillipes* by the presence of long ridges of cream-coloured flaky bark on the older stems. In *A. eremorum* this type of bark is absent, and the stems are conspicuously lenticellate.

Airy Shaw (1981) considered *A. spinescens* Benth. from the Celebes as conspecific with *A. capillipes*. *A. spinescens* is poorly represented by herbarium specimens, but after examination of a photograph of the holotype at K (Riedel s.n.: Gorontalo, North Celebes) I cannot support Airy Shaw’s treatment as the specimen depicted lacks the distinctive bark of *A. capillipes*.

Conservation status: Widespread and common. Present in at least 10 conservation reserves in south-east Queensland (Forster *et al.* 1991).

3. *Acalypha eremorum* Muell. Arg., Flora 47: 440 (1864); *Ricinocarpus eremorum* (Muell. Arg.) Kuntze, Rev. Gen. Pl. 2: 617 (1891). **Type:** Queensland. NORTH KENNEDY DISTRICT: Brigalow Scrub Burdekin River, “F.M.”, (lecto [here designated]: MEL! [MEL707681]).

Acalypha eremorum var. *sessilis* Baill., Adansonia 6: 317 (1866). **Type:** Queensland. NORTH KENNEDY DISTRICT: Burdekin River, *F. Mueller* (holo: G-DC?, n.v.).

Illustrations: K.A.W. Williams, Native Pl. Queensland 2: 31 (1984); S. & A. Pearson, Pl. Central Queensland 45–46 (1992); J. Hauser, Fragments of Green 190 (1992).

Erect, virgate shrub to 4 m high, perennial, monoecious, seasonally deciduous; indumentum consisting of simple non-glandular trichomes unless otherwise stated. Branchlets somewhat angular, with dense trichomes when young, glabrescent, lenticellate with age, flaky bark absent; lateral branches sometimes terminating in spines 10–12 mm long. Stipules linear-lanceolate, 1.5–3 mm long, 0.2–0.3 mm wide, with sparse to dense trichomes. Leaves petiolate, eglandular, discolorous; petioles 1–18 mm long, c. 0.3 mm diameter, with dense trichomes; lamina lanceolate, ovate or spatulate, 3–35 mm long, 2–15 mm wide, glabrous or with scattered to dense trichomes on both surfaces (often on same plant), venation penninerved and comprising 5 to 7 laterals per side of midrib; margins crenate; upper surface matt green, venation ± obscure; lower surface pale green, venation well developed; tip acute, mucronate or obcordate; base cordate, cuneate or obtuse. Inflorescences axillary and solitary, racemose or spicate, unisexual, often produced while whole plant is leafless. Female inflorescences spicate, up to 3 mm long, comprising a single pedunculate flower; peduncles 0.5–1 mm long, with sparse to dense trichomes; bracts deeply crenate to lobed, 1–1.7 mm long, 1.7–4 mm wide, up to 7 mm long and 12 mm wide on fruits, glabrous or with scattered to sparse trichomes. Female flowers sessile; sepals 3, ovate, 0.5–0.6 mm long, c. 0.3 mm wide, with scattered non-glandular trichomes and sparse glandular trichomes; styles 1.5–3 mm long, fused for 0.4–0.5 mm at base, branched 2 or 3 times, red. Male inflorescences racemose, 7–40 mm long; peduncles 1–5 mm long, with dense trichomes, densely flowered with the glomerules ± continuous or up to 3 mm apart; bracts lanceolate-triangular, c. 0.3 mm long and 0.2 mm wide, with dense trichomes. Male flowers: pedicels 0.4–1 mm long, c. 0.1 mm diameter, glabrous or with scattered to sparse trichomes; sepals ovate, 0.5–0.8 mm long, 0.3–0.7 mm wide, with sparse to dense trichomes; stamens 8, filaments flattened, c. 0.3 mm long and 0.1 mm wide, anthers 0.2–0.4 mm long, c. 0.1 mm



Fig. 1. A–F. *Acalypha capillipes*, G–L. *A. eremorum*. A & G. fertile twigs. $\times 1$. B & H. leaves. $\times 5$. C. stem section with ridges of bark. $\times 5$. D. & J. female flowers and inflorescences. $\times 10$, $\times 2$. E. & K. male flowers. $\times 20$. F. & L. stamens. $\times 40$. I. stem section with lenticels. $\times 5$. A–D from *Forster* 12531 (BRI); E–F from *Strong* 170 (BRI); G–L from *Forster* 12712 (BRI). Del. W. Smith.

wide. Fruits depressed-globose, 1.5–2 mm long, 2.5–3 mm diameter, with sparse to dense trichomes. Seeds \pm globose to slightly ovoid, 1.7–1.8 mm long, c. 1 mm wide and 1 mm thick, minutely punctate, brown. **Fig. 1G–L.**

Selected specimens: Queensland. NORTH KENNEDY DISTRICT: White Falls, Lolworth Creek, Toomba Station, 19°56'S, 145°39'E, May 1977, *Williams* 77058 (BRI); Barrabas Scrub, 20°05'S, 146°55'E, May 1972, *Stocker* 862a (BRI, QRS). SOUTH KENNEDY DISTRICT: Strathmore, SW of Collinsville, May 1960, *Johnson* 1805 (BRI); Hazelwood Gorge, SSW of Eungella, 21°15'S, 148°27'E, Jan 1993, *Forster* 12730 & *Pearson* (BRI). LEICHHARDT DISTRICT: Marlborough road, 8 km S of Lotus Creek, 128 km from Sarina, 22°37'S, 149°09'E, Mar 1990, *Forster* 6557 (BRI, L, QRS); Melaleuca Creek Scrub, 'Rookwood', 23°12'S, 149°46'E, Apr 1991, *Forster* 7906 & *McDonald* (BRI, QRS); Nathan Gorge road, 2.5 km SSW of 'Fairyl-land', 18.5 km from Cracow, 25°26'S, 150°18'E, Jul 1990, *Forster* 7028 (BRI, MEL, QRS). PORT CURTIS DISTRICT: Moores Creek E.P., Beserker Range, 23°19'S, 150°33'E, Jan 1993, *Forster* 12712 (BRI, L, MEL, QRS); 2.5 km SW of Raglan, R.146, Horrigan Creek, 23°43'S, 150°48'E, Mar 1989, *Gibson* TO1511 (BRI). MARANOA DISTRICT: Ooline, 20 miles [33 km] W of Mitchell, Mar 1936, *Blake* 10837 (BRI, DNA). BURNETT DISTRICT: Monogorilby, 26°01'S, 151°01'E, Dec 1981, *Forster* 491b (BRI); Near Taabinga Homestead, May 1948, *Michael* 4016 (BRI). WARREGO DISTRICT: 4 km E of 'Ardnaree', 26°07'S, 146°41'E, May 1979, *Purdie* 771d (BRI). WIDE BAY DISTRICT: Stony Creek, 4 km E of Didcot, 25°39'S, 151°54'E, Oct 1990, *Forster* 7532 (BRI, MEL, QRS); Black Gin Creek, T.R. 580, 25°29'S, 151°55'E, *Forster* 6596 (BRI, MEL, QRS). MITCHELL DISTRICT: Enniskillen, Nov 1943, *White* 12420 (BRI); Cuttsy's Spring, c. 30 miles [50 km] ESE of Yalleroi, Feb 1940, *Everist* 1967 (BRI). DARLING DOWNS DISTRICT: 'Kilburnie', 26°48'S, 150°27'E, Oct 1985, *Hoy* 83 (BRI). MORETON DISTRICT: 1.5 km SW of Mt Berryman, 27°44'S, 152°19'E, Feb 1991, *Forster* 7768 & *Sharpe* (AD, BRI, CGB, DNA, K, L, MEL, MO, PERTH, QRS); Hansens Road near Milbong, 4 km E of Boonah-Ipswich road, Sep 1984, *Bird & Collins* [AQ395644] (BRI). New South Wales. Grounds of Wollongbar Annexe of Lismore TAFE, Wollongbar, 28°48'S, 153°24'E, Jul 1991, *Forlonge* s.n. (NSW).

Distribution and habitat: *A. eremorum* is endemic in central and southern Queensland and from a few populations in north-eastern New South Wales (**Map 3**). Plants grow in microphyll and notophyll vineforests and vinethickets on a variety of soil types. These communities are often subject to prolonged droughts when the *Acalypha* plants are completely leafless.

Phenology: Flowers from September to June, fruits two to three months later. Plants may retain buds for months and then quickly flower on new growth after storm rains, often while the plant is still leafless.

Notes: Airy Shaw (1981) cited syntypes of the name *A. eremorum* as being at G-DC and MEL. I could not discern any appropriate specimens at G-DC (based on the microfiche); however, there is one specimen at MEL (probably collected by Mueller, cf. "F.M.") that is probably type material. This sheet is selected here as lectotype of the name.

Baillon (1866) described a variety *sessilis* of *A. eremorum* and apparently based his name on a syntype of *A. eremorum* at G-DC (Airy Shaw 1981). I have not been able to locate this specimen.

A. eremorum may be sympatric with *A. capillipes* and material of the two species can be confused when sterile; however, as noted above, characters of the bark can be used to identify it.

Conservation status: Common and widespread. Present in at least 12 conservation reserves in south-east Queensland alone (*Forster et al.* 1991).

4. *Acalypha lyonsii* P.I. Forst., sp. nov. affinis *A. capillipedi* Muell. Arg. a qua sine cortice ramentaceo, foliis utrinque glandibus refringentibus, stylis viridibus, staminibus 12, et seminibus subglobosis differt. **Typus: Queensland. COOK DISTRICT: Isley Hills, McKinnon Creek, 17°02'S, 145°43'E, 18 May 1992, *C. Lyons* 113 (holo: BRI! [1 sheet + spirit]).**

Erect, virgate shrub to 4 m high, perennial, monoecious, probably evergreen; indumentum of simple non-glandular trichomes that are clear in colour. Branchlets with sparse trichomes, glabrescent and with scattered lenticels with age, flaky bark absent; lateral branches not terminating in spines. Stipules lanceolate, 0.4–0.5 mm long, c. 0.2 mm wide at base, often with a long trichome on tip that is up to 0.7 mm long, but otherwise \pm glabrous. Leaves petiolate, discoloured; petioles 1–2 mm long, c. 0.3 mm wide, with sparse to dense trichomes; lamina elliptic, lanceolate or obovate, 3–30 mm long, 2–11 mm wide, venation penninerved and comprising 4 or 5 lateral veins per side of midrib; margins crenate to sinuate; upper surface dark

green, glabrous, venation \pm obscure, with numerous refringent glands; lower surface pale green, glabrous or with only an occasional trichome, venation weakly developed, with numerous refringent glands; tip acute to retuse; base cordate to obtuse. Inflorescences axillary and solitary, racemose or spicate, unisexual. Female inflorescences spicate, up to 12 mm long, comprising a single pedunculate flower; peduncles 5–10 mm long, with scattered to sparse trichomes; bracts irregularly crenate, 3–6 mm long, 8–14 mm wide, glabrous. Female flowers sessile; sepals 3, narrowly ovate, c. 0.5 mm long and 0.3 mm wide, with sparse trichomes; styles up to 3 mm long, fused for c. 1.6 at base, divided 2 or 3 times, green; ovaries c. 0.8 mm long and 0.9 mm diameter, lacking non-glandular trichomes, with sparse glandular trichomes. Male inflorescences racemose, up to 4 cm long; peduncles up to 1 mm long, with scattered trichomes, densely flowered with the glomerules \pm continuous or up to 2 mm apart. Male flowers: pedicels 0.4–0.5 mm long, c. 0.1 mm diameter, glabrous; sepals ovate, 0.7–0.8 mm long, c. 0.5 mm wide, glabrous and often with red flush; stamens 12, filaments flattened, c. 0.4 mm long and 0.1 mm wide, anthers c. 0.2 mm long and 0.1 mm wide. Fruits depressed-globose, c. 2 mm long and 3.5–4 mm diameter, lacking non-glandular trichomes, with sparse glandular trichomes, when mature green in colour, whitish towards base; bract continuing to enlarge from dispersal of capsule until abscission. Seeds \pm globose, c. 2.2 mm long, 1.9 mm wide and 1.6 mm thick, smooth, brown.

Fig. 2.

Specimens examined: Queensland. COOK DISTRICT: Currunda Creek, Cairns, 16°56'S, 145°41'E, Nov 1990, *Lyons* 83 (BRI, QRS); ditto, May 1991, *Lyons* 98 (BRI, QRS); Isley Hills, McKinnon Creek, May 1992, *Lyons* 114 (BRI); Isabella Falls area, McKinnon Creek, 4 km W of Edmonton, 17°02'S, 145°43'E, Jan 1993, *Forster* 13086 & *Bean* (A, BRI, MEL, QRS).

Distribution and habitat: *A. lyonsii* is endemic to the 'Wet Tropics' of north-east Queensland and is known from two populations near Cairns in the headwaters of Currunda Creek and McKinnon Creek (**Map 2**). Plants grow in the understorey of complex notophyll vineforest dominated by *Argyrodendron* sp. on soil derived from metamorphic rocks.

Phenology: Flowers November to January. Fruits January to March.

Notes: *A. lyonsii* is a distinctive species allied to *A. capillipes* and *A. eremorum*. It appears to be most closely allied to *A. capillipes*, both species having long-peduncled female flowers; however, *A. lyonsii* differs from *A. capillipes* in its lenticellate stems that lack flaky bark, both leaf surfaces with refringent glands, green styles, 12 stamens and \pm globose seeds. *A. lyonsii* is unique among the Australian species of *Acalypha* in having refringent glands on both leaf surfaces and 12 stamens in each male flower.

Conservation status: Both known populations of this plant are quite large with several hundred mature plants present at each locality. The McKinnon Creek population is not reserved and the majority of the Currunda Creek population occurs in Currunda Logging Area in State Forest 607. The lower portions of Currunda Creek are subjected to considerable disturbance due to residential development and it is likely that some isolated individuals of the *Acalypha* outside of the State Forest are endangered at this locality. Some consideration should be given to managing the relevant portions of S.F. 607 to protect both this plant and *Wetria australiensis* P.I. Forst. (Forster 1994) that grows in close proximity.

A suggested conservation coding is 2V (cf. Briggs & Leigh 1988).

Etymology: Named for Christopher (Chris) Lyons of Gordonvale who discovered this plant and made a number of excellent collections of fertile material for the Queensland Herbarium.

5. *Acalypha lanceolata* Willd., Sp. Pl. 4: 524 (1805). Type: Burm.f., Thes. Zeyl. 205, t. 93, fig. 2 (1737) (holo.).

Acalypha indica var. *australis* F.M. Bailey, Bot. Bull. 3: 16 (1891), **syn. nov.** Type: Queensland, COOK DISTRICT: Walsh River, *Barclay-Millar* (holo: BRI!; iso: MEL! [MEL707679]).

Wiry herb, up to 60 cm high, monoecious; indumentum consisting of simple non-glandular trichomes unless otherwise stated. Stems



Fig. 2. *Acalypha lyonsii*. A. fertile twig. $\times 1$. B. leaf. $\times 2$. C. refringent glands on leaf lamina surface. $\times 25$. D. stem showing lenticels. $\times 10$. E. female flower, bract and peduncle. $\times 5$. F. female flower & bract, face view. $\times 10$. G. male inflorescence. $\times 2$. H. glomerule of male buds. $\times 20$. I. male flower. $\times 40$. J. stamen. $\times 40$. K. fruit. $\times 10$. L. glandular trichomes on fruit. $\times 20$. M. seed. $\times 10$. All from Lyons 113 (BRI). Del. W. Smith.

rounded, with sparse trichomes, lacking spines. Stipules linear, 0.5–4 mm long, c. 0.1 mm wide, with sparse trichomes. Leaves petiolate, eglandular, discolorous; petioles 2–60 mm long, 0.5–0.8 mm wide, with sparse trichomes; lamina ovate, 5–60 mm long, 5–35 mm wide, with scattered to sparse trichomes on both surfaces, venation \pm palminerved with 3 veins from base and 5 or 6 laterals per side of midrib further up lamina; margins crenate; upper surface dark green, venation weakly developed; lower surface pale green, venation strongly developed; tip acute to shortly acuminate; base cuneate to truncate. Inflorescences axillary and usually paired, racemose-spicate, bisexual, up to 25 mm long; pedunculate up to 3 mm below the flowers, with scattered to sparse non-glandular trichomes and sparse glandular trichomes; female bracts deeply lobed, 2–3 mm long, 3–5 mm wide, with sparse non-glandular trichomes and sparse glandular trichomes; male bracts lanceolate, c. 0.8 mm long and 0.3 mm wide with sparse trichomes. Female flowers \pm sessile; sepals 3, lanceolate, c. 0.5 mm long and 0.2 mm wide, with sparse trichomes; styles 0.8–1.2 mm long, fused for c. 0.2 mm at base, divided once, green to clear; ovaries c. 1 mm long and 1 mm diameter, with sparse trichomes. Male flowers: pedicels 0.3–0.4 mm long, c. 0.1 mm diameter, with sparse trichomes; sepals lanceolate, 0.4–0.5 mm long, c. 0.2 mm wide, glabrous or with scattered trichomes; stamens 8, filaments flattened, c. 0.2 mm long and 0.05 mm wide, anthers c. 0.2 mm long and 0.05 mm wide. Fruits depressed-globose, 1.5–2 mm long, 2–2.2 mm diameter, with sparse trichomes. Seeds globose to somewhat ovoid, 1.1–1.8 mm long, 0.8–1.1 mm wide, 0.8–1 mm thick, faintly patterned, light brown. **Fig. 3G–J.**

Specimens examined: Cocos Keeling Islands. NORTH KEELING ISLAND: northeast, 11°49'S, 96°49'E, Mar 1986, *Williams* 37 (BRI, CBG). Philippines. LUZON: Province of Tatangas, Jul – Aug 1914, *Ramos* Bur. Sc. 22357 (BRI). Papua New Guinea. WEST SEPIK PROVINCE: Timbunke mission, Sep 1959, *Pullen* 1747 (CANB). MADANG PROVINCE: Stephansort, 1899, *Lewandowsky* 54 (BRI). NEW IRELAND PROVINCE: Katu Plantation, 26 miles [43.3 km] from Kavieng, Feb 1967, *Coode et al.* NGF29742 (CANB). BOUGAINVILLE PROVINCE: Kugumaru, Buin, Jul 1930, *Kajewski* 1837 (BRI). MOROBE PROVINCE: Finshhafen, 1889–91, *Weinland* 21 (BRI); Erap, 6°35'S, 146°40'E, Jun 1960, *Henty* NGF12424 (BRI). Australia. Western Australia.

6 km E of Mt Talbot, North Leopold Range, Kimberley Region, 16°27'S, 124°50'E, Mar 1989, *Keighery* 10645 (PERTH). Queensland. COOK DISTRICT: Pine River Basin, southern end near mouth, 12°31'S, 141°39'E, Feb 1981, *Morton* 1135 (BRI, MEL); 1.5 km NW of Marina Plains Homestead, 14°34'S, 143°52'E, Apr 1992, *Neldner* 3889 & *Clarkson* (BRI). BURKE DISTRICT: 84 km NE of Hughenden, 17 km NNE of Clyde Park Homestead (New), 20°13'S, 144°38'E, Mar 1993, *Thompson* HUG194 & *Henderson* (BRI). NORTH KENNEDY DISTRICT: Mt Julian near Proserpine, *Michael* 933 (BRI).

Distribution and habitat: Widespread in the palaeotropics including the Philippines and New Guinea. Recorded from widely scattered localities in northern tropical Australia in Western Australia and Queensland (**Map 1**). In Australia, the species has been collected in scrubby woodland, vineforest or black soil grassland.

Phenology: Flowers December to April. Fruits February to May.

Notes: This species was first recorded for Australia by Bailey (1891) when he named *A. australis* var. *indica*. Airy Shaw (1981) erroneously included this variety in *A. australis*, whereas Radcliffe-Smith (1990) did not mention it at all when claiming *A. lanceolata* as a new record for Australia based on the Western Australia collection.

A. lanceolata is a weedy species that was first collected in Australia over a hundred years ago. Despite the scattered and disjunct origin of collections available in herbaria, that are suggestive of sporadic and separate introductions of an alien taxon, I am considering it as native.

Conservation status: Widespread, but rarely collected.

6. *Acalypha nemorum* F. Muell. ex Muell. Arg., *Linnaea* 34: 38 (1865); *Ricinocarpus nemorum* (F. Muell. ex Muell. Arg.) Kuntze, *Rev. Gen. Pl.* 2: 618 (1891). **Type:** New South Wales. Clarence River, *Beckler* (lecto [here designated]: MEL! [MEL707659]; isolecto: MEL! [MEL707662]).

Acalypha cunninghamii Muell. Arg., *Linnaea* 34: 35 (1865); *Ricinocarpus*

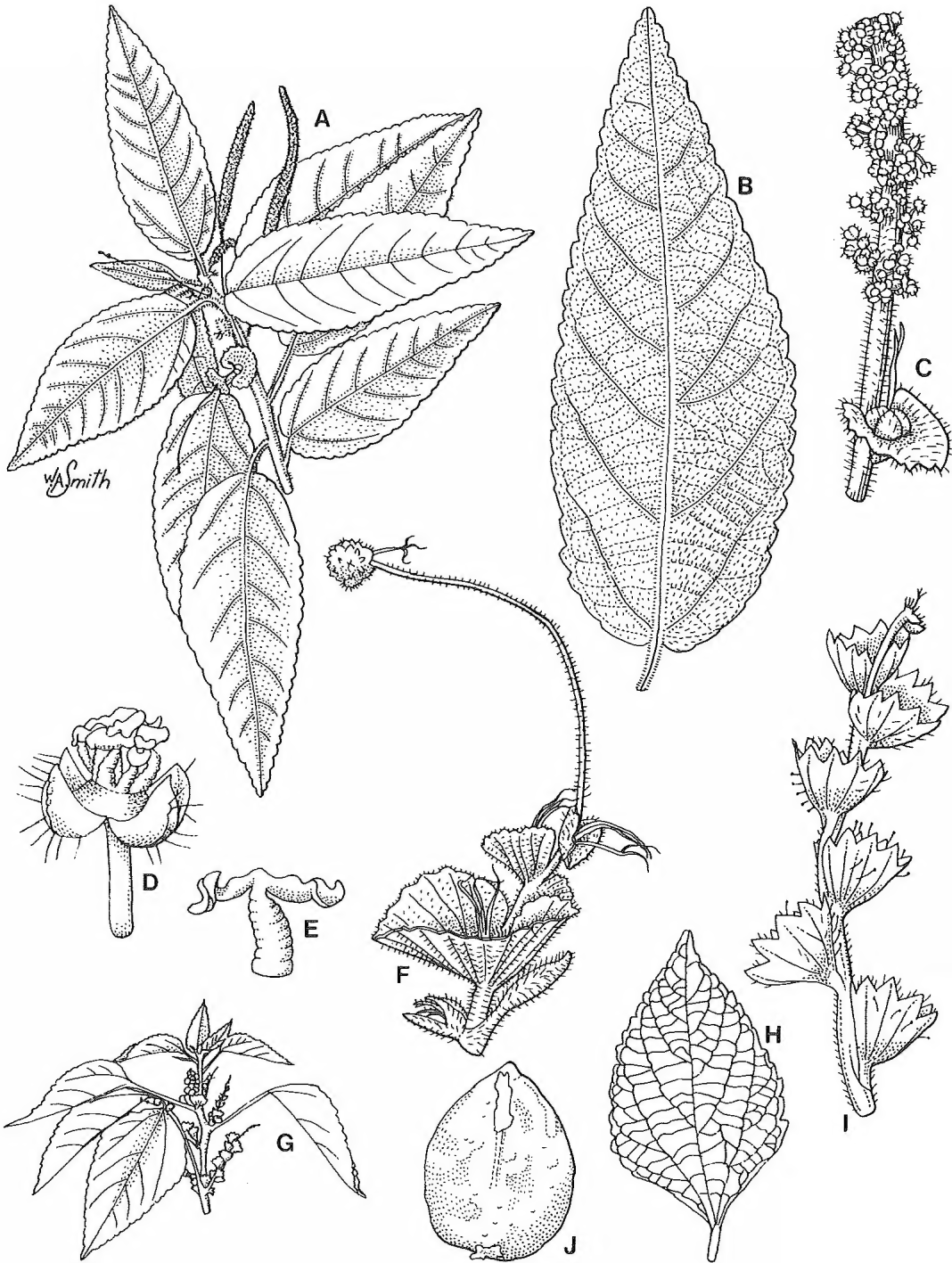


Fig. 3. A–F. *Acalypha nemorum*; G–J. *A. lanceolata*. A & G. flowering stems. $\times 0.5$. B & H. leaves viewed from below. $\times 1$. C. bottom portion of male inflorescence with single female flower at base. $\times 2$. D. male flower. $\times 20$. E. stamen. $\times 40$. F & I. female inflorescences. $\times 2$, 4. J. seed. $\times 20$. A–F from Forster 13144 (BRI); G & H from Morton 1135 (BRI); I & J. from Neldner 3889 (BRI). Del. W. Smith.

cunninghamii (Muell. Arg.) Kuntze, Rev. Gen. Pl. 2: 617 (1891). **Type:** Queensland. MORETON DISTRICT: Brisbane River, Moreton Bay, 1829, *A. Cunningham* 1836 (lecto [here designated]: G-DC [photo at BRI!]); Woods of Moreton Bay, 1828, *A. Cunningham* 1836 (lectopara: G-DC [photo at BRI!]).

Illustrations: K.A.W. Williams, Native Pl. Queensl. 3: 11 (1987); J. Hauser, Fragments of Green 177 (1992).

Sprawling to erect, spreading shrub to 4 m high, perennial, monoecious, evergreen; indumentum consisting of simple non-glandular trichomes clear to yellowish in colour. Branchlets with dense trichomes, glabrescent, lenticels absent, flaky bark absent. Stipules linear-lanceolate, 4–5 mm long, 0.8–1 mm wide at base, with dense trichomes. Leaves petiolate, eglandular, discolorous; petioles 2–50 mm long, 1–2 mm wide, with dense trichomes; lamina elliptic to ovate, 15–150 mm long, 4–60 mm wide, venation penninerved and comprising 8 to 10 lateral veins per side of midrib; margins crenate to sinuate; upper surface dark green, with sparse, softly velutinous simple trichomes, venation obscure; lower surface pale green, with dense, softly velutinous simple trichomes, venation strongly developed; margins ± entire, crenate or rarely serrate; tip acute to acuminate; base cordate to obtuse. Inflorescences axillary and solitary, racemose or spicate, unisexual or occasionally bisexual. Female inflorescences spicate, up to 11 cm long, comprising 1–several ± sessile flowers, with sparse trichomes; bracts irregularly crenate, 5–11 mm long and up to 20 mm wide, with sparse to dense simple trichomes. Female flowers sessile; sepals 3, broadly ovate, c. 0.8 mm long and 0.8 mm wide, with sparse simple trichomes and sparse glandular trichomes; ovaries 1–1.5 mm long, 1–1.5 mm diameter, with sparse to dense simple trichomes and scattered glandular trichomes; styles 5–7 mm long, fused for less than 1 mm at base, branched 2–3 times, red. Male inflorescences racemose; peduncles up to 31 cm long, with dense simple trichomes; densely flowered with glomerules ± continuous along axis or up to 1 mm apart; bracts triangular, 0.5–0.8 mm long, 0.5–0.8 mm wide, with dense simple

trichomes. Male flowers: pedicels 0.9–1.5 mm long, c. 0.1 mm diameter, usually glabrous, but sometimes with a few simple trichomes near the base; sepals ovate, 0.5–0.8 mm long, 0.4–0.7 mm wide, with sparse, simple hairs; stamens 8, filaments flattened, 0.3–0.7 mm long, c. 0.1 mm wide; anthers 0.4–0.5 mm long, c. 0.1 mm wide. Fruit depressed-globose, 2.5–2.8 mm long, c. 4 mm diameter, with dense simple trichomes and sparse glandular trichomes. Seeds ± globose, c. 2 mm long, 1.7–1.8 mm wide, c. 1.5 mm thick, smooth overall with minute patterning faintly discernible, pale brown. **Fig. 3A–F.**

Selected specimens: Queensland. BURNETT DISTRICT: Coongarra Rock, May 1931, *White* 7707 (BRI). WIDE BAY DISTRICT: The Springs, Bundaberg, *Michael* 1733 (BRI); Utopia, 14 km SSE of Biggenden, 25°38'S, 152°05'E, Dec 1991, *Forster* 9229 (BRI, MEL); T.R. 375, Palm Valley, Coast Range, 25°39'S, 152°02'E, Dec 1989, *Forster* 6161 (BRI, MEL); Wason L.A., S.F. 632, 25°59'S, 152°13'E, Feb 1989, *Forster* 4973 (BRI, K, MEL); Mudlow Gap, T.R. 26, 8 km N of Kilkivan, 26°01'S, 152°13'E, Nov 1990, *Forster* 7634 (BRI, CBG, K, L, MEL, MO, QRS); S.F. 639 Wrattens, Blackboy L.A., 26°15'S, 152°21'E, Feb 1993, *Forster* 13144 & *Machin* (BRI, K, L, MEL, QRS); Mt Cooroy, 4 km E of Cooroy, 26°24'S, 152°57'E, Apr 1986, *Sharpe* 4319 & *Guymer* (BRI). MORETON DISTRICT: Mt Eerwah, 4 km W of Eumundi, 26°29'S, 152°55'E, Aug 1984, *Sharpe* 3566 (BRI); Coolum Mt, c. 3 km S of Coolum Beach, 26°33'S, 153°04'E, Oct 1991, *Sharpe* 3038 (BRI, NSW); Mt Beerwah, Glasshouse Mtns, Oct 1935, *Goy* 76 (BRI); Nineteen L.A., T.R. 209, Mt Brisbane, 27°06'S, 152°32'E, Jun 1990, *Forster* 6874 *et al.* (BRI, QRS); One Mile Creek, Lawnton, Jan 1931, *Blake* [AQ201080] (BRI); Mt Coot-tha, Taylor Range, Jul 1930, *Hubbard* 3393 (BRI ex K); 0.5 km SW of McAfees Lookout, S.F. 309, 27°25'S, 152°52'E, *Forster* 7789 & *Bird* (BRI, L, MEL); Mt Crosby -Brisbane road, c. 3 km from Mt Crosby, Jun 1984, *Williams* 84054 (BRI); Nerang River, upper, May 1977, *Byrnes* 3511 (BRI); Mt Edwards N.P., 28°01'S, 152°32'E, Sep 1992, *Forster* 11485 & *Reilly* (BRI, L, MEL, NSW); Near White Swamp road, SSW of Boonah, 28°15'S, 152°34'E, Feb 1990, *Bean* 1368 (BRI). New South Wales. Moleton, 15 miles [25 km] NW of Coffs Harbour, Nov 1965, *Constable* 6364 (BRI, NSW).

Distribution and habitat: Endemic in central and southern Queensland and north-eastern New South Wales (**Map 4**). Plants grow in vineforests, vineforest-eucalypt forest ecotonal areas or open eucalypt forests.

Phenology: Flowering and fruiting throughout the year.

Notes: In the protologue for *A. nemorum*, J. Mueller states "In Nova Hollandia ad Clarence River (a cl. Ferd. Miller nuperrima missa!)". I

could not discern a relevant specimen at G-DC (as seen on the microfiche); however, there is ample material for choice of types at MEL. These specimens were all collected at 'Clarence River' by the collectors Beckler, C. Moore and Wilcox. The best of these sheets is MEL707659, collected by Beckler and this is selected as lectotype of the name.

With regards to the typification of *A. cunninghamii* Muell. Arg., there are two relevant specimens collected by A. Cunningham, both with the collecting number of 1836, in G-DC. One is labelled as being collected in 1828 from 'Brisbane River, Moreton Bay' and the other in 1829 from 'Woods of Moreton Bay'. The 1829 collection is the better specimen and is selected as lectotype for the name *A. cunninghamii*.

Conservation status: Common. Present in at least six conservation reserves in south-east Queensland (Forster *et al.* 1991).

7. ***Acalypha pubiflora*** Baill., *Adansonia* 1: 268 (1861). **Type:** Mozambique, Inhambane, *Peters* s.n. (holo: B [destroyed]; isotype: K [photo at BRI!]).

This species was considered by Radcliffe-Smith (1990) to comprise two subspecies; only *A. pubiflora* subsp. *australiana* A. Radcl.-Sm. is present in Australia.

Acalypha pubiflora* subsp. *australiana Radcl. - Sm., *Kew Bull.* 45: 678 (1990). **Type:** Western Australia. 1 km SE of Yammera Gap, SW side of Napier Range, 17°22'S, 124°49'E, 26 April 1988, *R.J. Cranfield* 6548 (holo: PERTH!; iso: K, QRS!).

Erect, spreading shrub to 3 m high, perennial, monoecious, evergreen; indumentum of simple non-glandular trichomes clear in colour. Branchlets ± rounded, with scattered to dense trichomes when young, glabrescent, lenticels absent, flaky bark absent. Stipules lanceolate, 2–5.5 mm long, 0.4–0.8 mm wide, with scattered to dense trichomes. Leaves petiolate, discolorous, glandular; petioles 5–35 mm long, c. 1 mm diameter, glabrous; lamina ovate, 25–120 mm long, 15–60 mm wide, venation penninerved and comprising 9 to 11 laterals per

side of the midrib; margins crenate; upper surface dark green, glabrous or with occasional trichome, venation weakly developed; lower surface pale green, glabrous apart from occasional trichomes on veins and numerous sessile refringent glands, venation strongly developed; tip acute to acuminate; base obtuse to truncate. Inflorescences axillary and solitary, spicate, probably unisexual. Female inflorescences spicate and comprising 1–several flowers, 5–20 mm long; peduncles up to 20 mm long, with sparse trichomes; bracts irregularly crenate, 6–10 mm long, 14–20 mm wide, with sparse sessile glands and occasional trichome. Female flowers sessile; sepals 3, lanceolate-ovate, 0.8–1 mm long, 0.4–0.5 mm wide; ovaries c. 0.8 mm long and 0.7 mm diameter, with scattered trichomes and dense sessile glands; styles 3–4 mm long, fused for c. 0.5 mm at base, branched 2 or 3 times, green. Male inflorescences and flowers not seen. Fruits globose, 3–3.5 mm long, c. 3 mm diameter, lacking or with only scattered trichomes, with dense sessile glands. Seeds ± subglobose, 2.3–2.7 mm long, 1.8–2 mm diameter, smooth, dark brown. **Fig. 4A–E.**

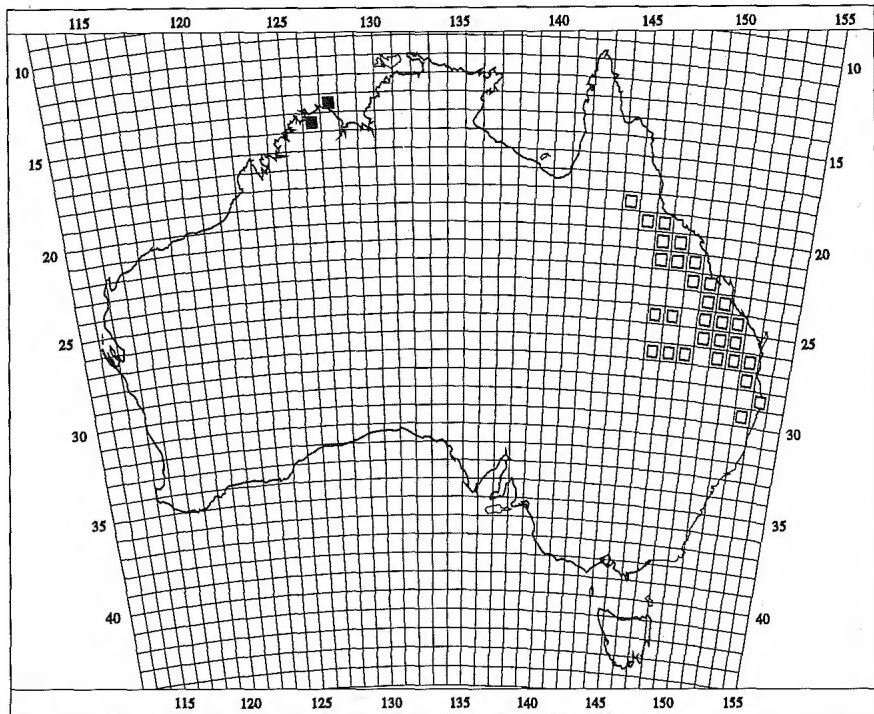
Specimens examined: Western Australia. 13.5 km E of Hat Point, 13°56'S, 126°08'E, Jun 1987, *Kenneally* 10207 & *Hyland* (PERTH); 16 km W of Mt Anderdon, York Sound, W Kimberley coast, 14°57'S, 125°16'E, Jun 1987, *Kenneally* & *Hyland* s.n. (PERTH).

Distribution and habitat: Known only from the Kimberley region of north-western Western Australia (**Map 3**). Plants grow in closed tussock grassland dominated by *Sorghum* sp. in brown black clay soil over limestone.

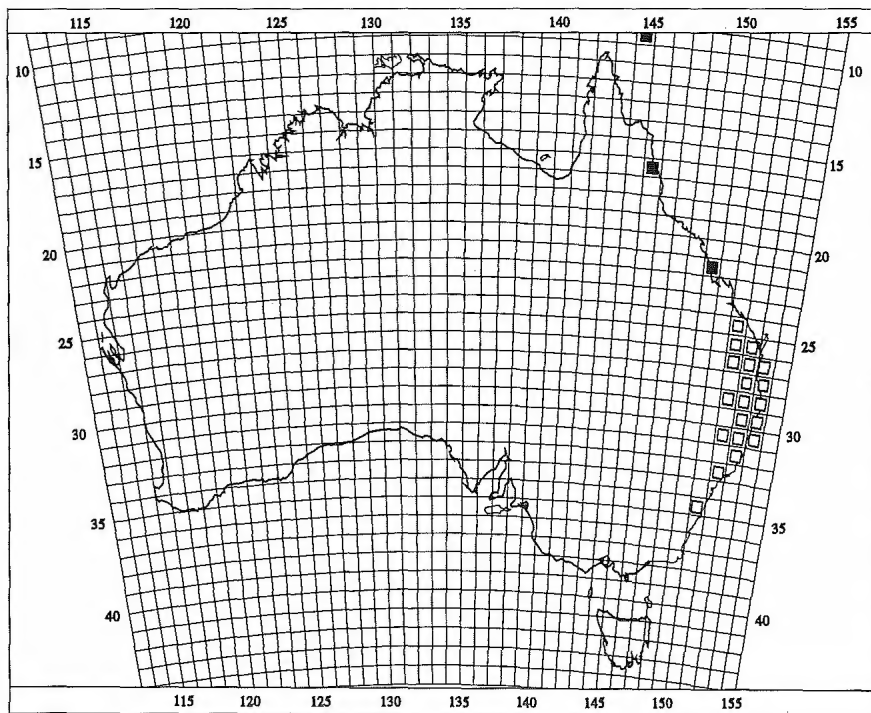
Phenology: All of the collections of this taxon examined, apart from the type, are sterile. Further observations to determine phenological patterns are required.

Notes: This taxon is poorly known as complete floral data are unavailable at present. Radcliffe-Smith (1990) considered the Kimberley material to be conspecific with the African *A. pubiflora*, but differing mainly in size of the plants, hence his recognition of a distinct subspecies.

Conservation status: This plant is poorly collected; however, much of its potential habitat is remote and difficult to access. It is likely that



Map 3. *Acalypha eremorum* (open squares); *A. pubiflora* subsp. *australiana* (closed squares).



Map 4. *Acalypha nemorum* (open squares); *A. wilkesiana* (closed squares).

further populations will be found when botanical exploration in the Kimberley region is given priority. The species is not considered rare or threatened.

8. *Acalypha wilkesiana* Muell. Arg. in A. DC., Prodr. 15(2): 817 (1866). Type: 'In insulis Fidji' [Fiji], 1838-42, *Wilkes* (holo: G-DC [fiche at BRI!]).

Erect, spreading shrub to 2 m high, perennial, monoecious, evergreen; indumentum consisting of simple non-glandular trichomes clear to somewhat golden in colour. Branchlets rounded, with dense velutinous trichomes, becoming scattered to sparse with age, lenticels absent, flaky bark absent. Stipules linear, 5–11 mm long, 0.2–1 mm wide, with sparse to dense velutinous trichomes. Leaves petiolate, eglandular, discolorous; petioles 15–120 mm long, c. 3 mm diameter, with dense, velutinous trichomes; lamina ovate, 70–250 mm long, 50–150 mm wide, venation palmately with 5 veins from base and 9 to 12 lateral veins per side of midrib further up the lamina; margins crenate; upper surface dark green or often variegated and usually coloured in reds and browns, with scattered trichomes, venation ± obscure; lower surface pale green or often variegated and usually coloured in reds and browns, with scattered to sparse trichomes, venation strongly developed; tip acute to short acuminate; base cordate, cuneate or obtuse. Inflorescences axillary and single, racemose or spicate, usually unisexual. Female inflorescences spicate, 100–140 mm long, comprising 1-several flowers; peduncles ± sessile, with sparse trichomes; bracts deeply lobed, 5–10 mm apart, 2–8 mm long, 1–9 mm wide, with sparse trichomes. Female flowers sessile; sepals 3, lanceolate-ovate, 1–1.2 mm long, 0.7–1 mm wide, with sparse trichomes; styles 2.5–9 mm long, fused for c. 0.5 mm at base, divided several times, red; ovaries 1.2–2 mm long, 1.8–2 mm diameter, with dense trichomes. Male inflorescences racemose, up to 140 mm long, pedunculate up to 10 mm long; densely flowered with glomerules continuous along the axis; bracts lanceolate, 1–1.2 mm long, 0.4–0.8 mm wide, with dense trichomes. Male flowers: pedicels 0.7–1 mm long, c. 0.1 mm diameter, with dense trichomes; sepals lanceo-

late, 0.8–0.9 mm long, c. 0.5 mm wide, with scattered trichomes; stamens 8, filaments flattened, c. 0.2 mm long and 0.1 mm wide, anthers c. 0.2 mm long and 0.1 mm wide. Fruits depressed-globose, 2.5–2.7 mm long, 3–3.2 mm diameter, with sparse trichomes. Seeds oblong, c. 2 mm long, 1.3 mm wide and 1.2 mm thick, smooth, brown. **Fig. 4F–J.**

Specimens examined: Queensland, COOK DISTRICT: Murray Island, 1878, *Chalmers* [MEL69828] (MEL); ditto, Jul 1970, *Lawrie* 9 (BRI); ditto, Jan 1970, *Lawrie* 25 (BRI); Low Island, Great Barrier Reef, c. 15 km from Port Douglas, Jun 1969, *Done* [AQ008176] (BRI). SOUTH KENNEDY DISTRICT: Dolphin Heads, 21°02'S, 149°11'E, Jul 1992, *Batianoff* 920790 *et al.* (BRI).

Distribution and habitat: *A. wilkesiana* is widespread in Malesia and Melanesia where it is extensively cultivated in villages both for ornament and practical uses (Smith 1981). In Australia it is cultivated as an ornamental and leaves may be used for wrapping bananas on Torres Strait islands (*Lawrie* 9). It is semi-naturalised in disturbed areas on some islands (**Map 4**).

Phenology: Flowers and fruits throughout the year in tropical regions.

Notes: Smith (1981) speculated that *A. wilkesiana* could be a 'sport' of a Malesian species, although this remains to be determined.

Excluded species

A. compacta C.T. White was named from a plant of unknown origin cultivated in the Brisbane Botanic Gardens and although mentioned by Airy Shaw (1981) is neither native nor naturalised in Australia.

Acknowledgements

W. Smith (BRI) provided the illustrations. The Directors/Curators of the cited herbaria allowed access to collections either on loan or *in situ*. Types at BM and K were located and photographed by P.S. Short (MEL) and P.S. Weston (NSW) while each was Australian Botanical Liaison Officer (ABLO) at Kew (U.K.). Types at G-DC were located and photographed by G.P. Guymer (BRI) while ABLO. C. Lyons of Gordonvale made special collections and kindly showed me populations in the wild, during what

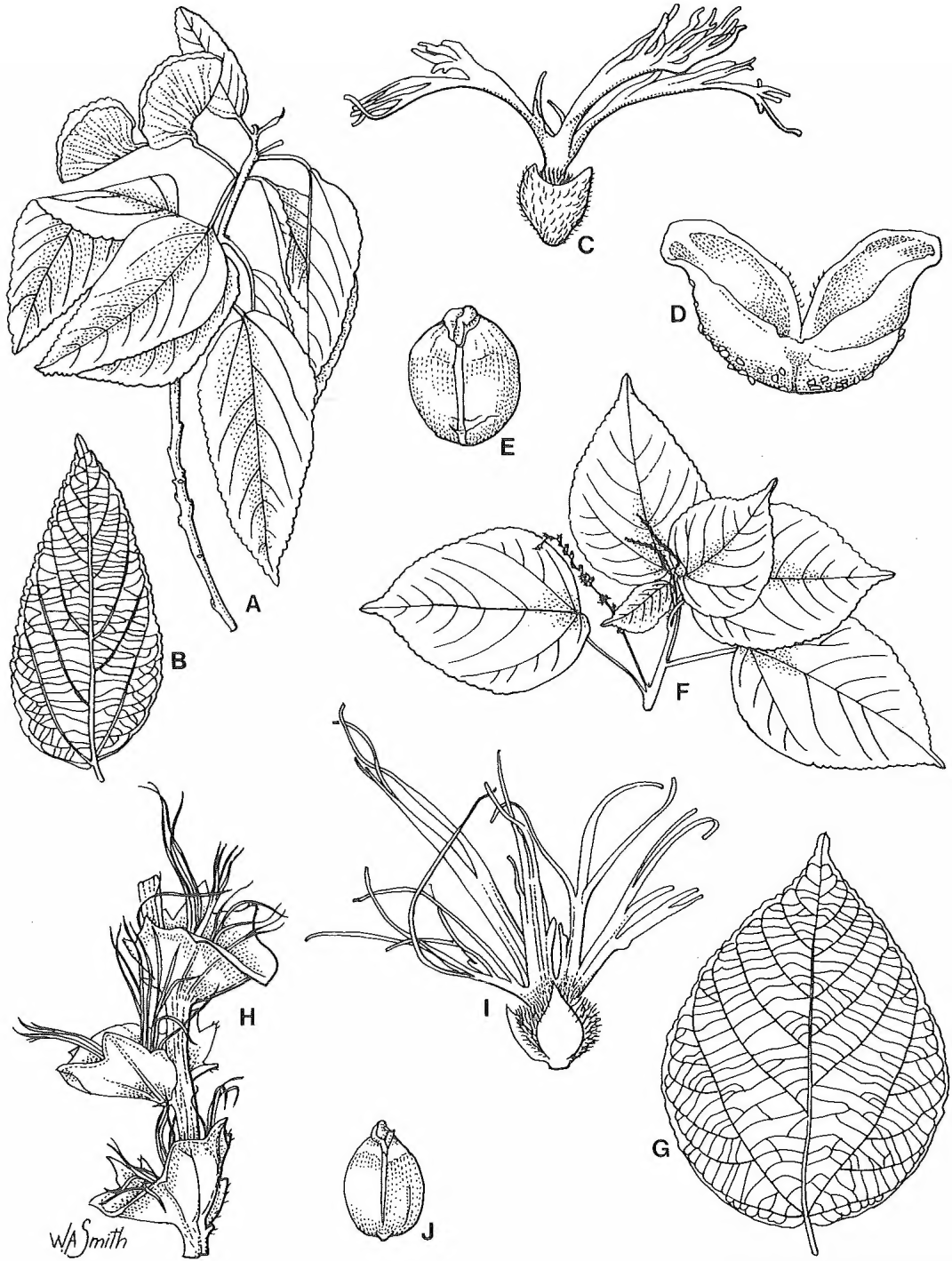


Fig. 4. A-E. *Acalypha pubiflora* subsp. *australica*. F-J. *A. wilkesiana*. A & F. flowering or fruiting stems. $\times 0.8$, 0.2 . B & G. leaves viewed from below. $\times 1$, 0.4 . C & I. female flowers. $\times 8$. D. dehiscent third of capsule. $\times 8$. E & J. seeds $\times 8$. H. female part of inflorescence. $\times 4$. A-E from Cranfield 6548 (PERTH); F-I from Lawrie 25 (BRI); J from Batianoff 920790 *et al.* (BRI). Del. W. Smith.

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